DOCUMENT RESUME

ED 192 427 CS 503 069

AUTHOR Stockwell, John C., Ed.; Kepke, Allen N., Ed.
TITLE Emperical Research in Theatre, Volume 6, No. 1, Summer 1980.
INSTITUTION Bowling Green State Univ., Ohio. Center for Communications Research.; Speech Communication Association, Falls Church, Va.
PUB DATE 80
NOTE 53p.
AVAILABLE FROM Center for Communication Research, Bowling Green State University, Bowling Green, OH 43403 ($3.00)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Acting; Annotated Bibliographies; *Characterization; Children; *Communication (Thought Transfer); *Creativity Research; Dialects; *Dramatics; Emotional Experience; Indexes; Self Esteem; Speech Communication; *Theater Arts

ABSTRACT

This journal provides a focal point for the collection and distribution of systematically processed information about theory and practice in theatre. This issue contains discussions of (1) the effects of cognitive complexity on characterization depth and performance; (2) the effects of a director's system of communication on actor inventiveness and rehearsal atmosphere; (3) an instrument and a process used to identify musical compositions with greater accuracy than the written score, to account for interpretive differences among polished performing artists, and to match artists' interpretations with fundamental emotional expressions; (4) the effects of informal drama in influencing the self esteem of preadolescents; and (5) a programed approach to dialect training for the actor. Appendixes include an index to the previous five journal issues and an annotated bibliography on behavioral research in theatre. (AEA)

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EMPIRICAL RESEARCH IN THEATRE

Published by

The Center for Communications Research
Bowling Green State University
Bowling Green, Ohio

and in cooperation with

The Theatre Division of
The Speech Communication Association

Volume 6 Summer, 1980 No. 1

The Effects of Cognitive Complexity on Characterization Depth and Performance 1
William G. Powers, David L. Jorns, Robert B. Glenn

Effects of Director's System of Communication on Actor Inventiveness and Rehersal Atmosphere 6
Suzanne M. Trauth

Manfred Clynes' Sentography as a Potential Measure of Theatre Arts 17
George Caldwell

The Effects of Dorothy Heathcote's Informal Drama in Influencing Self Esteem of Pre-adolescents 25
Pam Woody Barragar

A Programmed Approach to Dialect Training for the Actor 36
Gordon A. Jacoby

Appendix One:
Indices to ERT, volumes 1 to 5 40

Appendix Two:
Behavioral Research in Theatre, an Annotated Bibliography . 45
George Gunkle and Anne Westfall Cochran

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Briant Hamor Lee

EMPIRICAL RESEARCH IN THEATRE

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THE EFFECTS OF COGNITIVE COMPLEXITY ON CHARACTERIZATION DEPTH AND PERFORMANCE

William G. Powers, David L. Jorns, and Robert B. Glenn

In the course of a semester, the teacher of a basic acting course will encounter numerous trials and tribulations. The problem most often encountered is "How do I teach people the art of creating a live character?" Many acting teachers take an individualistic introspective approach to creativity while others seek common denominators of creativity. The latter, while not denying theatre and acting as art, recognize the educational value of the scientific method in producing insights into individual differences and their impact upon performance quality. This study uses the scientific method to assist in determining to what extent the individual variable of cognitive complexity effects depth of characterization and performance in the classroom acting situation.

While the process by which we form impressions of each other has been widely investigated, that body of literature has not been applied to the process which an actor utilizes in forming an impression of a character described in a play and the ultimate impact of that impression on the actor's performance. Cognitive complexity, a dominant variable in impression formation literature, is concerned with the number of dimensions utilized for interpreting and assigning meaning to others. This would appear to be directly related to the actor's task of developing depth and breadth in a particular character analysis. Crockett (1965) suggests that a person structures his social world through a system of personal constructs.

> Perceivers whose cognitive systems differ in complexity are expected to form qualitatively different kinds of interpersonal impressions since a perceiver's constructs constitute the psychological counterparts of the characteristics and traits that he attributes to others (Crockett, 1965, p. 48).

It has been well established that individuals differ in the complexity and organization of personal constructs (Delia, 1974, 1976), thereby differing in the depth and scope of their impressions of others.

Research has further indicated that as cognitive complexity increases, interpersonal impressions are more extensive or differentiated (Delia, 1974), more organized around motivational attributions and are characterized by greater evaluative stability (Delia, Clark, and Switzer, 1974). In addition, high cognitive complex subjects have demonstrated greater capacity for taking the perspectives of others (Hale and Delia, 1976). In essence, the highly cognitive complex person forms more differentiated, abstract and organized impressions of others (Peevers and Secord, 1973) and has a greater capacity for perspective-taking (Hale and Delia, 1976; Delia, Clark, and Switzer, 1974). When an actor prepares to perform the role of a particular character, the ability to form an indepth character analysis composed of many levels and subdivisions of personal constructs based upon information provided in the script would seem to be directly related to the ability to communicate to an audience and to other performers the depth of that character. On that basis, the following hypotheses were

generated:

H_1: High cognitive complex actors will develop characterizations of significantly more depth than low cognitive complex actors.

H_2: High cognitive complex actors will be rated significantly higher in performance evaluations than low cognitive complex actors.

H_3: High cognitive complex actors will be ranked significantly higher in performance evaluations than low cognitive complex actors.

Methodology

Students enrolled in basic acting courses at a midwestern university volunteered to participate in this project. From the initial group of 65 actors, 43 completed all phases of the project. Actors were not informed of the purpose of the study until its completion.

The cognitive complexity of the actors was assessed with the revised version of the Role Category Questionnaire (Hale and Delia, 1976). Reliability and validity indices are substantial (Horsfall, 1969). Actors were asked to describe in writing a person they knew and liked and a person they knew and disliked. Approximately five minutes were allowed for each description. The total number of psychologically based constructs used in those descriptions constituted the measure of cognitive complexity. The number of psychologically based constructs were coded by two trained assistants. A high intercoder reliability index ($r = .94$) was indicated. The assistants had no knowledge of the thrust of the study nor personal knowledge of the individuals involved as subjects. A median split procedure was used to separate the actors into categories of high and low cognitive complexity (median = 14; low cognitive complex $n = 21$; high cognitive complex $n = 22$).

Two weeks later the actors were assigned a character from a play (Litrack, n.d.) used in the normal course of the class to prepare for a scene. Following one week of preparation, actors were requested to write a descriptive character analysis. Approximately five minutes were allowed. The total number of psychological descriptors of the character was used to indicate the depth of characterization. Inter-rater reliability was again high ($r = .87$). On the surface, this appears to be identical with the method of measuring cognitive complexity. It is, however, only to the extent of counting the number of psychologically based constructs used to describe a stimulus individual. A major difference lies in the form of the stimulus with one being a person who has been interacted with over a period of time and who is actually known while the other is a fictional person known only through the descriptions inherently provided by the playwright. Other techniques available to measure such a variable as depth of characterization involve qualitative decisions based upon observation of performance. In this study, a differentiation was desired between cognitive preparation and actual performance.

Approximately one week later, each person performed the assigned scene. An expert panel of judges (two theatre faculty members and one advanced graduate student) rated the quality of each performance

on a scale of 0-9 bound by the adjectives "Bad" and "Excellent" and then ranked all performances. Tie ranks were not allowed. The average of the three judges' ratings and rankings was used to indicate performance evaluations. Judges had no knowledge of the methods or variables of this project. Specific evaluation criteria were not provided for the judges. They were allowed to apply their own criteria for creative quality with the average of the three judges' ratings and rankings used to indicate the overall reaction to performance quality. As anticipated, interjudge reliability was not high as desirable, evidencing some discrimination in quality judgments of ratings and rankings. Rating evaluations of the three judges were moderately intercorrelated (r = .71, .68, and .61) yielding an average correlation between judges of .67. Intercorrelation of ranking evaluations were also moderate (rho = .73, .67, and .63) with an average correlation for all three judges of .68. Difficulties are present when asking judges to rank such a high number of performances; however, with creative quality judgments being relatively subjective in nature, the effort to increase perspective outweighed the potential for error.

Results

Data representing each dependent variable were analysed by t tests. High cognitive complex actors ($\bar{X}$ = 8.01) demonstrated characterizations of significantly more depth ($t = 4.289$; $p < .05$; $df = 41$) than low cognitive complex actors ($\bar{X}$ = 5.49). High cognitive complex actors ($\bar{X}$ = 5.04) were rated significantly higher in performance quality ($t = 5.052$; $p < .05$; $df = 41$) than low cognitive complex actors ($\bar{X}$ = 2.99). Finally, high cognitive complex actors ($\bar{X}$ = 16.15) were ranked significantly higher in performance quality ($t = 3.743$; $p < .05$; $df = 41$) than low cognitive complex actors ($\bar{X}$ = 27.24).

On the basis of these results, all three hypotheses were confirmed.

Discussion

Levels of cognitive complexity appear to have a differentiated impact upon the student performer's depth of characterization and initial performance. The degree to which that impact is maintained following numerous rehearsal periods and constructive criticism from teacher or directors remains to be uncovered. The actor who auditions poorly yet ultimately shows the greatest insight into character is a familiar phenomenon to most directors and one which lies at the very heart of creativity. A related point is the manner in which an actor reponds to direction. An actor almost never performs without having received some direction. Some actors grow considerably without direction and some do not. The correlation between an actor's growth under direction and levels of cognitive complexity has yet to be determined. If high cognitive complex performers bring to the initial rehearsal more complex characterizations based upon script analysis, are they also able to perceive deeper characterizations of other characters at that time and are they able to relate to other characters, as performed in rehearsal, at deeper levels? If so, it would lead to the conclusion that they would give better final performances.

Should the observed impact remain, educators may wish to investigate potential teaching strategies designed to improve a person's ability to develop differentiated and organized impressions. While cognitive complexity involves one's way of viewing the world and, as such, is perhaps resistant to dramatic changes in total perspective, it may be possible to train individuals to acquire perceptual depth in the specific stimulus field represented by a script and co-actors' performances.

This research was confined to the educational area and concerned only the initial characterization performance. Additional investigation concerning initial (prior to rehearsal) and final (actual performance) levels of characterization should be undertaken in theatre environments.

Imagining the resulting performance of a cast composed only of high cognitive complex performers relative to the performance of a cast of only low cognitive complex performers leads one to the conclusion that cognitive complexity may be a variable of sufficient impact to elicit additional investigation.

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EFFECTS OF DIRECTOR'S SYSTEM OF COMMUNICATION ON ACTOR INVENTIVENESS AND REHEARSAL ATMOSPHERE

Suzanne M. Trauth

Introduction

The nature of the rehearsal process and its underlying director/actor relationships is becoming an area of crucial concern for theatre practitioners. Though the success of the rehearsal process is often a result of the nature of the relationship established between the director and the actors, the essence of this relationship remains largely undefined in the literature of the theatre. Specific information concerning that which contributes to or detracts from this interaction is lacking and requires further study.

Recent empirical research in theatre (New, 1964; Erb and Fulton, 1975; Ruble, 1975; Porter, 1973), supported by findings in education, management, and small group interaction (Anderson, 1939; Withall, 1949; Cogan, 1956; Flanders, 1948, 1951, 1963, 1967, 1971; Katz and Kahn, 1966; Argyris, 1957; Likert, 1961; McGregor, 1960; Blake and Mouton, 1969; Cartwright and Zander, 1968; Lewin, Lippitt and White, 1939; Lippitt and White, 1960; Fiedler, 1967), suggests that the system of communication used by the director has a substantial influence on the nature of the director/actor relationship. Furthermore, the type of relationship established between director and actor (teacher/pupil, supervisor/subordinate, leader/group member) may affect the socio-emotional atmosphere of the rehearsal and the productivity of the cast.

The Problem

Most of the research referred to above dichotomized the director's (teacher's, supervisor's, leader's) behavior into two categories: 1)that which was democratic, permissive, encouraging actor (student, subordinate, group member) participation and initiation of ideas and feelings, and 2)that which was autocratic, controlling, intended to restrict actor (student, subordinate, group member) initiation of ideas and to maintain dependence on the authority figure. This categorization accounts for the two dimensions operative in any group situation: 1) concern for the task and the structure of the task situation, and 2) concern for the socio-emotional climate and consideration of group members. Given this importance of the type of communication used by the director throughout the rehearsal period, the present study attempted to determine if indeed there were measureable differences resulting from the use of two contrasting systems of communication: open, participatory vs. closed, non-participatory. This investigation attempted to determine the effects of each of these systems of communication in two particular areas: 1) actor involvement and 2) the rehearsal atmosphere.

Independent Variables

Two independent variables were manipulated in this investigation: 1) the system of communication used by the director (open vs. closed), and 2) two different directors, each using both

systems of communication. Four experimental casts were found:

1) Director A/Open System
2) Director B/Open System
3) Director A/Closed System
4) Director B/Closed System

By referring to the literature mentioned earlier (Anderson, Withall, Lippitt and White, Flanders, Porter, Fiedler, and Likert) a list of appropriate behaviors was compiled for each communication system. In the Open System, the director accepted differences of opinion, indicated approval, accepted and used ideas supplied by members of the cast, and offered information and asked questions to facilitate the individual's problem-solving. During the rehearsal period, decisions were open to discussion and there was group participation and involvement in setting goals and appraising progress.

The director in the Closed System determined details of all activities, lectured and gave directions and orders, demonstrated and provided direct refusals and used self-supporting remarks to sustain or justify her own position or authority. In rehearsals, decisions were less open to discussion and decision-making and goal-setting was done by the director.

The individual directors were included as independent variables since an earlier study (Erb, 1975) suggested that the director might act as an important influence on the acting unit, regardless of the type of communication system used throughout the rehearsal period. Such findings are consonant with the results of previous research in related areas.

Dependent Variables

It was reasoned that the director's system of communication and subsequent director/actor relationships might affect the actor's inventiveness and the work atmosphere in a variety of ways. Consequently, the study explored the effects of each independent variable on a number of dependent measures:

1) Pre-Post Creativity Test to measure growth in creativity as a result of the rehearsal process;

2) Job Description Index was used to measure actor satisfaction with regard to the director, the rehearsal, and other cast members;

3) Group Atmosphere Test used to obtain a semantic description of the rehearsal atmosphere;

4) Problem-Solving Tests used to measure actor inventiveness, the ability to generate ideas, and actor independence;

5) Improvisations coded by means of an Index of Dramatic Behavior also used to measure actor inventiveness by providing a quantitative indication of the complexity of the actors' nonverbal behavior;

6) Post-production interviews with the actors and the directors, and daily journals kept by the actors and the investigator used to gather anecdotal data;

7) A system of interaction analysis (Observational System of Rehearsal Interaction Categories) used to test the degree of director influence and the degree of actor participation.

Though no specific results were hypothesized, previous research suggested that differences in socio-emotional climate and task productivity among the group would appear as a result of the contrasting systems of communication and could be indicated by the dependent measures.

Procedure

This study was conducted within the context of the production of "open scenes," these being a series of highly ambiquous lines of dialogue with no additional information provided in the scenes concerning characterization, situation, and motivation. In the present study, four "open scenes" were used. Each of the four scenes had four characters, and although the characters and situations were different for each scene, the same sequence of lines was used for all four scenes.

The directors were students at Bowling Green State University. One had recently received her Master's degree, and the other was a last quarter Senior. They spent approximately twenty-five contact hours with the investigation learning the theory behind each system of communication and applying the systems to typical rehearsal problems.

Actors participating in the investigation were students drawn from several sections of Introduction to the Theatre at Bowling Green State University who used their involvement in the study to satisfy a course requirement in practical theatre participation. Since they were fairly inexperienced actors (a few had some high school experience), the experience variable was consistent throughout the groups. This inexperience, it was believed, might have resulted in their having few rigid expectations of director behavior. Each of the sixteen subjects was cast in one of the scenes, two being directed according to the open system of communication and two directed in the closed system of communication. Subjects were involved in the study for approximately a four-week period including seven rehearsals, a public performance of the scenes, and post-production evaluations of their experience.

During this four-week period, dependent measures were administered on several occasions. Actor response was obtained by use of pencil-and-paper inventories and indices, video-tape recordings of nonverbal acting exercises, group problem-solving activities, verbal interaction analyses, unobtrusive observation and audio recording by the investigator, and post-production interviews with the directors and actors.

The primary difference between casts exposed to the open style of directing and those exposed to the closed style lay in the area of rehearsal decision-making: in the closed system, the director

provided all of the script information with regard to characterization and motivation and gave the actors specific blocking and stage business; in the open system the actors, with the encouragement of the director, made all decisions with regard to the performance of the script.

Results

A variety of statistical tests were used to assess differences among the four rehearsal groups, including a multivariate and univariate analysis of variance and discriminant analysis. The small sample size and the subsequent lack of statistical power suggest caution in discussion of the statistical results. Consequently, the analysis of the data was approached with the intention of detecting patterns and trends suggested by the results. A further caution: it must be noted that the rehearsal situations created for the study were somewhat artificial due to the experimental nature of the investigation. Consequently, one cannot assume that the behavior of either the directors or the actors would be the same in a "real" production situation.

1) The results of three administrations of the Job Description Index (Smith, Kendall, and Hulin, 1969) suggested that the casts of Director A indicated greater satisfaction with the director and less satisfaction with other cast members, while the casts of Director B indicated less satisfaction with the director and greater satisfaction with other cast members. There was also the suggestion that cast members in both open groups indicated greater satisfaction with the director and other cast members than casts in the closed system.

2) Three administrations of the Group Atmosphere Scales (Fiedler, 1966) suggested that casts experiencing the open system of communication described the atmosphere as more interesting, accepting and warm, but less friendly, successful and supportive; the casts of the closed system, on the other hand, described the atmosphere as more friendly, successful and supportive, but less interesting, accepting and warm. Casts of Director A described the rehearsal atmosphere as more cooperative and supportive and those of Director B as more accepting and warm. (Both open and closed groups described the rehearsal atmosphere as cooperative on different administrations of this test.)

3) The results of the three administrations of the Problem-Solving Tests suggested that the casts of Director A produced more ideas than those of Director B when solving problems individually with the director absent. (Actors were requested to produce as many titles for the scenes as possible.) With the director present, there were a few quantitative differences among the groups when solving problems as a group. (Actors were requested to produce as many hypothetical endings for the scenes as possible.) However, the closed casts generated ideas that were more detailed and well-developed than those produced by the open groups. Both of Director A's casts were more task-oriented than Director B's casts when left alone to solve "real" problems directly related to the production.

4) There were few differences among the groups with regard to the complexity of the Improvisations performed twice during the rehearsal period (Lasier, Sutton-Smith, Karioth and Zahn, 1972).

5) The results of the Pre-Post Torrance Tests of Creative Thinking (Torrance, 1974) suggested that the casts of Director A demonstrated more originality while those of Director B demonstrated more flexibility in the course of the rehearsal process.

6) The analysis of the rehearsal interaction matrices (Porter, 1973) suggested that, indeed, the directors in the open groups spent more time encouraging actor-initiated work and provided more positive feedback. In turn, there was more positive actor response and greater actor participation. Directors in the closed groups spent more time maintaining actor dependence and director feedback was a combination of positive and neutral response. Actors responded less positively and more negatively to the directors. The interaction matrices also indicated that Director A, in general, spent slightly more time encouraging actor-initiated work with both her casts than did Director B with both her casts. Director A's open cast received no negative feedback and indicated the most positive actor response of all the groups.

7) The information provided by the daily journals and post-production interviews suggested that actor response within a single system will vary depending upon actor expectations of their "role" and their desire and ability to accept rehearsal responsibility. The degree to which actors may become independent of the director is a reflection of the degree to which they are comfortable and successful participating in the decision-making of the rehearsal process.

Though the open groups spent more time interacting and communicating as a group, the closed casts spent more time performing the script. While most of the actors in the open casts consistently remained "involved" in the rehearsal, actors in the closed groups often withdrew from the rehearsal when not specifically being directed.

There was a certain degree of frustration in the groups of both systems: the open casts were frustrated because often they were not certain how to deal with the amount of freedom they were given; the closed casts expressed frustration with the lack of opportunity to participate in the decision-making and with the director's excessive dominance, though all appreciated the fact that the directors in the closed groups "knew what they wanted."

Director A felt rewarded by her work with the open group, somewhat frustrated by the resentment she perceived in the closed group, and did not feel that actor expectations were a barrier to productive rehearsals. Director B was frustrated with both her casts: with the lack of personal contact in the closed cast and with the lack of rehearsal discipline in the open.

Discussion

The present investigation was undertaken as a case study and, at the outset, intended simply to suggest patterns of behavior. "Conclusions" reached are indicative of more complex information and much broader implications. The results of the study do suggest possible relationships between the director's behavior and the actors' responses and, therefore, deserving of notice.

It is clear that actors are sensitive to the behavior of the director; they are aware of director moods, attitudes (especially toward them), and systems of communication. In addition, actors have definite feelings about the effects of the director's behavior on their work. Like most people, a great amount of responsibility coupled with a great amount of freedom is initially frightening.

Most actors, even inexperienced ones, enter the rehearsal situation with expectations about their role and the director's role in the ensuing rehearsal process. It is important that these expectations be resolved so that all members of the producing group understand what is expected of each.

Though actors will comply with given situational demands (all actors, with the exception of one or two, were cooperative), it is possible that they will conceal frustrations indefinitely. These frustrations may eventually result in hostile or very childish, playful behavior.

Directors, even when cognizant of the particular situation in which they find themselves, may be inaccurate in their perception of actor satisfaction and actor expectations. (Directors were confederates in this study and understood the implications of the use of each system of communication.)

The extreme form of a system of communication or style of direction can be frustrating to both actors and directors. Too much actor responsibility or too little actor participation may result in rehearsal problems.

Conclusions were also reached as a result of 1) differences between systems of communication, and 2) differences between directors.

System of Communication

Some of the differences due to the system of communication are supported by the literature previously reviewed and, therefore, are not unexpected. For example, the indication that casts experiencing the open system expressed greater satisfaction with the director and with other cast members is predictable in terms of Likert's findings. The opportunity to share in the decision-making and actually create the final product themselves was appreciated by many of the members of the open casts, and their satisfaction is understandable.

However, the results of the second measure of socio-emotional climate, the Group Atmosphere Scales, are not so easily interpreted. At one point, the open groups are perceived as more cooperative and interesting, while the closed are viewed as more friendly and successful. At a later date, the open casts are described as more accepting and warm and the closed casts as more cooperative and supportive. Both the Likert and Lippitt and White studies support the notion that an open, participatory environment is perceived by group members as more cooperative, interesting, accepting, and warm. On the other hand, the quantity of work accomplished in a closed, non-participatory environment would, as suggested by Lippitt and White, be described as more successful.

The difficulty with the Group Atmosphere Scales arises with the results that indicate that the closed casts also view their group as more friendly, supportive, and, at a later date, as more cooperative. It is possible that the measurement of group atmosphere is not the measurement of one dimension but of several dimensions. Actors might be responding to 1) the socio-emotional environment created by the director, 2) the socio-emotional environment created by the members of the cast, or 3) the socio-emotional environment created by work on the task. If such is the case, members of the closed casts might well view their groups as friendly (the cast members) or successful (the task). On the other hand, closed groups might also view the environment as cooperative and supportive if all members of the groups are perceived as "working together" to make progress toward the goal. By the same token, the open groups could perceive the atmosphere as accepting and warm (the director) and still feel that the environment is less cooperative and supportive if progress toward the group goal is unsatisfactory or if the lack of member participation is frustrating.

The results of the Problem-Solving Tests suggested that the closed groups produced ideas that were more well-developed and detailed, might appear contradictory to the notion that a more permissive environment encourages creative expression. Nevertheless, this particular Problem-Solving Test was the first opportunity provided the closed casts to create as a group. Their response to this test might simply have been a reaction to "group freedom." Since the director remained in the room, it is also possible that the closed groups were more task-oriented in the presence of the director.

It was obvious to the investigator that the closed groups spent a greater quantity of time rehearsing the script while the open casts spent more time interacting and communicating as a group. Since there were no tests of the effects of the rehearsal process on the quality of the final product, no assumptions can be made concerning the appropriateness of either style of communication with regard to performance of the scenes. It is possible, though, that the amount of time spent rehearsing the script in the closed groups was the cause of the "tired" and "bored" expressions of the participants.

Finally, it was also obvious to the investigator, as a result of unobtrusive observations, that while open groups tended to remain involved in the rehearsal process throughout the entire rehearsal (possibly because they felt obligated), the closed cast members often psychologically and physically withdrew from the rehearsal process at those times when <u>they</u> specifically were not being directed. It appeared as though open cast members retained a closer contact with the rehearsal process, either by choice or force, while closed members felt less obligated to remain an active part of the process.

Director

Differences among the groups due to particular directors were more apparent than differences due to systems of communication. It is clear that the tools of any type of communication must necessarily be affected by the wielder of those tools. In short, the communicator is as powerful, if not more so, as the manner of communication. As

suggested earlier, research findings in the field of education support this notion. The socio-emotional environments of the groups of each director differed greatly. While Director A was viewed with more satisfaction and her casts as less, Director B was perceived in a less than satisfactory light while the cast members were viewed with greater satisfaction. Both of Director B's casts expressed frustration with some aspect of the rehearsal process: the open group disliked having to make all of the decisions necessary for the performance of the scenes; the closed group felt that the director was far too dominant and was generally displeased with them. Director B herself expressed dissatisfaction with each of the groups. Consequently, the "dissatisfaction with director" is certainly understandable. (This reciprocal "dissatisfaction" is reinforced by Miller and Bahs' findings, 1974.)

It is possible that actor attitude toward the director also was reflected at the task level in the form of actor inventiveness. That Director A's casts were more satisfied with the director, produced a greater quantity of ideas, and were more task-oriented suggests a possible relationship between actor perception of the director and productivity. The possibility exists that greater satisfaction with the director, regardless of the directing styles, results in a greater task-orientation on the part of the actors. Such a possibility raises the question of "acting by frustration": do actors work because of the director or in spite of him?

The results of the interactional analysis (Observational System of Rehearsal Interaction Categories) help to confirm and explain aforementioned "conclusions." The suggestion that cast members in open groups were more satisfied with the director and possibly with other cast members is supported by the Interaction Analysis Data: the directors accepted actor ideas and feelings, actor participation was greater, and director feedback was primarily positive. The type of rehearsal atmosphere indicated by the results of the Interactional Analysis might well be more "satisfying" for cast members. Indeed, the actor response was more positive for the open groups than for the closed.

Differences among groups resulting from the director may also be discussed with respect to the Interaction Analysis Data. The fact that Director A's casts were more satisfied with the director than were the casts of Director B parallels the results suggested by this data: Director A spent more time encouraging actor-initiated work, her groups interacted more often and actor response was slightly more positive. Some of the dissatisfaction among the actors in Director B's casts might be due to the fact that she spent less time encouraging actor-initiated work and a greater amount of time "rehearsing the scene."

One other clear difference between the casts of Director A and those of Director B was with respect to the Problem-Solving Tests: when left to work on their own, the casts of Director A were more task-oriented than were those of Director B. While the casts of Director B spent more time "rehearsing the script," the casts of Director A spent more time interacting. There may be a possible relationship between the individual's motivation to work on a task and the degree to which the individual is involved with the process that produced the task.

In other words, if the casts perceived the Problem-Solving exercises as related to the rehearsal process (either directly or indirectly), the nature of their involvement or commitment to that process may have affected their task-orientation with regard to the tests.

These "conclusions" are possible indications of patterns of relationships between the director and the actors when contrasting systems of communication are used. To suggest that either one or another system of communication is appropriate for all directors, all plays, or even for all rehearsals within the context of a single production is obviously impractical. It appears as though the question of the director's style of leadership ought to be answered with the word "flexibility." The role that the director must assume in the group and his subsequent system of communication ought to be a response to the demands of the particular script and to the needs of his particular cast.

It must be remembered that the "actors" participating in the study were not a representative sample of student actors. As a result, their expectations and reactions to the theatrical situation may be misleading. In addition, the directors themselves may have been a limitation of the study. Their discomfort with or dislike of either system of communication might have affected their behavior as would their skill in the use of one system or the other.

The present study attempted to detect differences in actor behavior resulting from the director's system of communication. The fact that there were more significant differences between the two directors than there were between the two systems of communication suggests the greatest limitation of the study: the degree to which the individual director affects or is affected by the particular style of directing or system of communication he uses is undetermined. The present study reinforces the notion that this director/system interaction deserves investigation.

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MANFRED CLYNES' SENTOGRAPHY AS A POTENTIAL MEASURE OF THEATRE ARTS

George Caldwell

In reference to artistic works as visual stimuli, J. J. Gibson (1966, p.224) suggests that "structured light by artifice" can be perceived on two levels. Art is seen as an object and as an image, but not necessarily restricted to one or the other. Not only does an artistic display transmit information about the material of which it is constructed, such as oil paint, clay, or marble; but also information is conveyed about the original stimulus the image represents. However, the image is an attempt to have the beholder see what the artist has seen; therefore, the information in the image is altered or modified from the orignial source. Thus, art involves not only the rendering of an outer world but also of an inner world of the artist. Even less explicit images as those found in nonrepresentational art manage to convey feelings and moods to the viewer. The communication of the artist's inner world has come to be called by most authorities, expression. Rudolf Arnheim explains:

> Every work of art must express something. This means, first of all, that the content of the work must go beyond the presentation of the individual objects of which it consists. But such a definition is too large for our purpose. It broadens the notion of "expression" to include any kind of communication. True, we commonly say, for example, that a man "expresses his opinion." Yet artistic expression seems to be something more specific. It requires that the communication of the data produce an "experience," the active presence of the forces that make up the perceived pattern. How is such an experience achieved? (1954, p.360)

How is such an experience achieved? Though Arnheim's question is only generally theoretical, his attempted answer does begin to touch on perceptual matters currently under scientific investigation. Arnheim reminds us that neither is the weeping willow inherently sad, nor does the spectator transfer to the tree his/her own personal sadness. The willow's very shape, direction, and flexibility convey to the onlooker an expression of passive melancholy. Further, these elements are not restricted to the cultural understanding of any single perceiver. Often visual expressions are shared consistently by the majority, lending credence to the ethereal term, "universality." Of this Arnheim states:

> To define visual expression as a reflection of individual human feelings would seem to be misleading on two counts: first, because it makes us ignore the fact that expression has its origin in the perceived pattern and in the reaction of the brain field of vision to this pattern; second, because such a description unduly limits the range of what is being expressed. (1954, p.368)

Although the example of the weeping willow is derived from nature, the artist knows how to manipulate the same potentially expressive elements that he/she feels the viewers similarly understand, thus expanding and enhancing the image of the willow.

Arnheim's notion is certainly not unique. Art is commonly believed to be communicative of inner expression to humanity at large. Only until recently, however, has any precision in the description of that communication been achieved.

Manfred Clynes has developed an instrument and process by which to identify musical compositions with greater accuracy than the written score, to account for interpretive differences among polished performing artists and to match artists' interpretations with fundamental emotional expressions.

To begin his descriptive refinement, Clynes concerned himself with what he has termed "idiologs" (1969, p.184). These are concept words, such as "red" or "sweet," which involve an element of imagination. They can be created in a moment and have physiologic brain concomitants. In other words, idiologs produce neurological responses manifested in some exterior behavior. In the past, various mental categories such as "feeling" had been considered by Clynes as vaguely defined, and he attempted to alleviate such inadequate descriptive methods by the investigation of idiolog responses. The analysis of idiologs offered the opportunity to identify the various shades of feeling, to consider how responses communicate nonverbally, and to ascertain the amount of underlying precision of communicative responses (1969, p.184).

Clynes found that many physical responses to idiologs had clear beginnings and endings and remained consistently similar in spatio-temporal measurement--eye pupil contractions to color illumination and change, for example. Other responses include those of the finger, limb, and facial musculature. Considering both the short interval of time between the stimulus and response and the predictability of the response, Clynes determined that the movements were preprogrammed. He called these clear-cut voluntary movements of 2-3 seconds duration "actions" (1969, p.190). The actions encompass the action idiolog and its execution. Clynes also discovered that once an action had begun, it could not be stopped or reversed. It literally must run its course. During the action there is a "command" decision and an execution of the command involving accurate programming. For the action to be satisfactory there must be a clear idea (action idiolog) and an accurate response (1969, p.190). The implication, of course, is the existence of a precise response capable of measurement.

Clynes categorized human motion into two basic types: 1) a response to the changing material world; and 2) a response to an inner state (1969, p.190). The latter is found in artistic communication and is applicable to the expression of the artist. As with other actions, these expressive actions--E-actions (1973, p.65)--have a beginning and an end. Similarly, sincere E-actions follow programmed commands, seeking the expression of their action idiolog. The process of evoking an idiolog, or fantasized emotion (1971), is called "elogizing" (1973, pp.106-7). The condition itself is known as a "sentic state" (1969, p.357)--the state of inner emotion or feeling. A succession of sentic states is referred to as a "sentic cycle." A cycle may consist of eight or ten sentic states within a half an hour period (1969, p.357). Just as general bodily gestures are often consistent with certain feelings (anger, for example, as frequently practiced by students of

acting), so do minute movements--E-actions--maintain a reliable pattern. According to Clynes, the spatio-temporal output of the action results in an "essentic form." Its shape is precisely pre-programmed according to its original sentic state and is subject to accurate measurement with appropriate instrumentation.

Clynes' precise method of describing graphically and statistically inner spatio-temporal expressions appears much more accurate than can be found within the limitations of verbal language. His method seems appropriate for the empirical analysis of artistic endeavors of all types. However, for a further explanation concerning the application of the measurement of essentic forms to art, and especially theatre arts, it seems to review the evolution of Clynes' experimentation.

In a series of tests with pupil diameter reflex measurements, Clynes traced the information flow from an exterior stimulus to the brain, to a behavioral response (action). He dispelled from the beginning any notion of opposite information traveling to the brain, for perception of opposites requires two channels. This single channel information flow Clynes called "undirectional rate sensitivity." In studying pupil reflex, Clynes found that a response cannot be canceled out by so-called opposite changes in stimuli, but rather opposing stimuli tend to reinforce each other. As Clynes illustrates, $2 + 4 = 4$ and $2 - 2 = 4$ (1961, p.966). For example, a light flash on the right eye, and a dark flash on the left eye simultaneously does not render the pupils motionless. On the contrary, both contract.

To further clarify opposing stimuli (idiologs) in another experiment involving pupil reflex, Clynes discovered evidence suggesting three limitations to rate sensitivity: 1) response is not negative but has a lower limit of zero; 2) information transmission is in one direction only; and 3) receptors and nerves can fire only positive frequencies (1962, p.838). In other words, there is no negative in any communicative channel; actions do not simultaneously work against each other. Further, in some sensory cases such as smell, there are no opposing channels. Clynes also found that interrupted stimulation (of light) with the same intensity produces greater responses (1961, p.966). This is an early but vague indication that as stimuli intensities change, so do the channels. The importance of such an issue in terms of measuring expression is that the isolation of a single idiolog in a single communicative channel in turn means an accurate description of the entire action from beginning to end.

In a recent study (Kohn and Clynes, 1969, pp.943-9), Clynes brought out more information concerning channel shifts in relation to stimulus change. He described an increase in response as an "on" response and a decrease as an "off" response. In dealing with color as the central stimuli and change in intensity, hue, and placement as the variables, Clynes reached the following series of findings:

1) color change evokes an "on" response, regardless of the intensity;

2) change in intensity results in an "on" increase and an "off" decrease proportionally, regardless of color, suggesting again different degrees of response;

3) change in stimulus pattern without a change in intensity or color produces an "on" response (design evokes response regardless of its simplicity or complexity in relation to its preceding design):

4) stimulus intensity produces an "on" response;

5) background intensity produces an "on" response;

6) background and stimulus color interchange produces "on" responses but not of identical response shapes;

7) separate color channels are individually, unidirectionally sensitive.

All of the above suggests a different channel for each response; i.e., different shades of red are perceived by different receptors, transmitted in different channels to different neural areas, evoking different responses; thus, the "on"/"off" effect in single channels.

Measuring the brain itself, Clynes' investigation used a circular array of eight scalp electrodes to measure spatially evoked potential responses at various points in the occipital region of the brain. The experiment used changing light intensities as the stimuli, and it was found that different intensities are registered in different areas of the brain (Clynes, Kohn, and Lifshitz, 1964, p.494); clear indication of the "on"/"off" channel shifts.

Further, in a similar experiment, Clynes found the patterns or electrode configurations produced by the evoked potentials not to be idiosyncratic to individuals but to follow a definite sameness among eight adult males (1969, p.654). In a report of the same study, Clynes offers a concise summation of his conclusion on the brain's use of channel shifts:

> We may draw a parallel between muscle systems and channels of communication and control. There are systems of muscles that require two opposing muscles for motions in both directions, since muscles can only pull but not push; other muscles, like those lining the intestines, need to function only in one direction. Similarly, some communication and control systems have developed a two-channel rein control, whereas other systems can function satisfactorily with single-channel information. The term "rein control" is derived from the configuration of the reins of a horse: information about the polarity of change is received from the spatial location of the channel, and the informing action of each channel is similar. . . .Because of unidirectional dynamic sensitivity and the symmetry of rein control, there is no possibility of cancellation of action, and events are not immediately "forgotten." For example, with the sense of touch, removal does not cancel the sensation, even of a short, momentary touch. Without unidirectional rate sensitivity, the rapid removal (or negative deformation) would

> cancel a great part of the stimulus, and the organism would not know that it had touched something or had been touched (1969, p.654).

Clynes suggests that each area of the brain is able to produce a predictable evoked potential, because it is genetically preprogrammed, similar to the biological programs found in the DNA. He takes his step into the realm of artistic expression preprogramming by a series of experimentations with music through the use of touch transducers. In keeping with his previous theory that minute movements represent programmed inner expression (essentic forms), Clynes developed an apparatus, a sentograph--a transducer coupled with a computerized system,[1] that employs a button pressed by the index finger which tracks the finger's movements both vertically and horizontally, in space and in time (usually two seconds). Subjects were given a series of emotionally expressive idiologs and asked to respond by pressing the button. The process was strenuously repeated and averages were taken. The graphed configurations were considered the essentic forms. The forms were then correlated among individuals, and the results were incredibly high (Clynes and Milsum, 1970, p.334).

Clynes concluded the following:

1) there are sentic states;
2) the sentic state is composed of a number of protosentic (original) states in various combinations;
3) there are only a small number of proto-sentic states;
4) to each sentic state there corresponds a "true" ortho-sentic form;
5) the essentic forms are biologically programmed and genetically preserved;
6) essentic form acts as a communication in the degree of precision with which it conforms to the ortho-essentic form. . .;
7) we communicate feelings with others through their recognition of essentic forms;
8) sentic states can be self-generating through the essentic form production (Clynes and Milsum, 1970, p.335).

Clynes then applied the same principle and apparatus to music. He had unquestionably polished performers (e.g., Casals and Serkin) review a variety of musical pieces while responding on the finger transducers. Among all of the musicians, obviously similar essentic forms emerged for particular composers. Concise differences were found between some commonly grouped composers, such as Dubussy and Ravel, Waggner and Tchaikovsky. The essentic forms appeared to be more descriptive and precise than the standard musical notations.

Clynes also points to aesthetic similarities of ortho-essentic forms to the visual arts. He compares the form of "love" to the rounded

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[1]Manufactured by Human Environments Research, Inc., N.Y. Information available: Manfred Clynes, Biocybernetics Institute, Palisades, N.Y. 10964.

lines of Picasso's Mother and Child and the form of "sex" to the pointed angles in Picasso's graphic, Pan; however, he has not experimentally tested such a notion. Indeed, this is where Clynes' empirical investigation of art ends, and this is where I suggest it should start.

Application of Manfred Clynes' measure of sentic states to the investigation of theatre arts seems limitless. Through analysis of subject reactions to color, Clynes has already shown the capability of sentography in registering sentic responses to visual environment; indeed, artificial environment (1973, p.120). Certainly, sentography could function as an appropriate tool in the measurement of responses to other elements of design, such as line or form, since they, too, in theory and practice are frequently attributed to similar powers of emotional arousal. If sentography can measure responses to stimuli as complex as a symphonic musical composition, then perhaps audience sentic responses to theatrical settings can be tapped. Indeed, through comparison of essentic forms, determination of the most dominant, i.e., influential, design elements in a variety of stage settings might be attained. It may be possible to assign statistically certain qualities of design elements to specific theatrical styles and historical periods, as critics have theoretically done in the past. But the notion of sentographic measure is not restricted to audiences and stage settings.

Sentography offers potential in the area of cast and director relationships. An accurate statistical account of actor interpretation of character, script, and production seems plausible. Perhaps the degree of compatability between sentic states/cycles of director and cast is associated with other independent variables--mode of directional style, success of cast/director interaction, quality of performance.

In a recent study, Clynes examined individuals' sentographic responses to other suggested individuals and compared the essentic forms with those of emotion (1972, p.16). He found that when the two sets of forms were matched, they constituted a "personal relationship profile (PRP)" (1973, p.121). For example, in a typical instance, the sentogram for "father" was seen by a subject to the essentic form of love; the form for President Nixon was similar to the form of anger; Woman 3, sex; and so-on (1973, pp.122-23). The results of the study suggest that sentography may be quite sensitive to audience reactions to characters in plays as well as named person-concepts. In addition, Clynes states, "the sentographic profile is stable--it appears to change only when the relationship changes" (1972, p.16). The greatest advantage of sentography may be its temporal aspect; quite plausibly the changes in audience emotional responses to characters at specific moments during the performance may be recorded. As the live production develops, as the characters develop, so should the development be reflected in the PRP of the spectators.

With regard to training and experience, a precise distinction, if any exists, could be made among the expert and non-expert audience members. Clynes suggests that in terms of artistic expression, there is no naive perceiver, but thus far his experimentation of art has been limited to the expert who is trained in the understandings of expressive processes.

Conclusion

Though the brain does seem to have compartmentalized programs, there is still little evidence that these programs are not culturally rather than genetically founded. At the close of a chapter on sentic states, Clynes himself admits the following:

> Assuming we know the inherent communicative shape of, say, love, as measured and identified by our method of measurement, we may ask a new question, namely why love, as expressed, has this particular shape--i.e., why is love experienced and evoked through these forms?
>
> To this question we have no answer, and it is difficult to know how to consider the question. Why does anger have the form it does? True, there is clearly a tendency for anger to push away--to reject--and for love to enfold, and the essentic forms we obtain reflect such movements. But the problem is that not all outward movement expresses anger--there is a pure form of anger as there is for love. We shall have to be content at this time to ascertain the essentic forms of love, sex, anger, etc., and derive satisfaction from knowing that we are dealing with forms independent of particular physical realizations (1969, p.205).

Regardless of the origin of sentic states, sentography still seems a promising tool to measure the expressive qualities of theatre arts. Essentic forms are not confined by the structure of verbal language. And, unlike the paper-and-pencil dependent variable, the transducer measures responses in time, registering changes in reaction and providing an opportunity to test audiences during performances unencumbered by meddlesome gadgetry. Sentographic measure is apparently sensitive to responses involving a number of concepts which are found in theatre: visual, auditory, interpersonal.

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THE EFFECTS OF DOROTHY HEATHCOTE'S INFORMAL DRAMA IN INFLUENCING SELF ESTEEM OF PRE-ADOLESCENTS

Pam Woody Barragar

How an individual views him/herself appears basic to understanding that individual. Increasingly, educators are becoming concerned with the importance of self-esteem in the effective functioning of an individual. Self-esteem refers to an individual's self-judgment. In self-evaluation, the individual examines his/her capabilities and attributes according to personal standards and values and arrives at a decision of self worth in positive or negative terms. He or she may employ positive terms to refer to characteristics perceived desirable (e.g., "friendly," "good," "kind"), or he/she may use negative terms to indicate characteristics which are considered socially undesirable (e.g., "bad," "dirty").

The major purpose of this study is to determine the effect of Dorothy Heathcote's informal drama methodology (referred to as ENCOUNTER) in influencing self-esteem of pre-adolescents. Secondary purposes are (a) to determine the effect of a formal drama approach (PLAYS) in influencing self-esteem and (b) to compare the effect of ENCOUNTER and PLAYS in influencing self-esteem. The following hypotheses are proposed.

Hypothesis 1 (Principal Hypothesis): After having participated in ENCOUNTER, children will score higher on self-esteem measures than children not so exposed.

Hypothesis 2: After having participated in PLAYS, children will score higher on self-esteem measures than children not so exposed.

Hypothesis 3: After having participated in ENCOUNTER, children will score higher on self-esteem measures than children who have participated in PLAYS.

Heathcote's Philosophy and Method

Formal and Informal Drama

Heathcote categorizes approaches to drama as formal and informal. Formal drama is a structured, teacher-centered approach in which the teacher knows in advance what he/she wants to happen. Because the learning of the class begins with what the teacher knows, formal drama efficiently covers a volume of material quickly, allowing the teacher to impose him/herself between the fact and the material (e.g., "I will guide you"). Formal drama tends to lead the energies of the participants toward a finished product (a play) while growth of an individual child is sometimes pushed into the background. Heathcote says that "formal drama provides a comforting screen which doesn't expose the teacher too often to the real thinking of the class" (Dorothy Heathcote Talks to Teachers, n.d.).

Informal drama is a person-centered approach to drama in which the teacher does not know in advance what is going to happen. The learning of the class begins with what the participant wants to know and

explore. The teacher's expertise is concealed so as to allow the participants' expertise to function. Their knowledge of people, rather than knowledge of things and skills, is brought forth in solving problems through role playing. According to Heathcote, such role playing experiences function as a tool to uncover "prejudice" and "pinpoint attitudes" (Dorothy Heathcote Talks to Teachers, n.d.).

> I define educational drama (informal) as being anything which involves persons in active role-taking situations in which attitudes not characters are the chief concern, lived at life-rate (i.e., discovery at this moment, not memory based) and obeying the natural laws of the medium . . . available to the group at the present moment and any conjecture of imagination they are capable of, in an attempt to create living pictures of life, which aim at surprise and discovery for the participants rather than for any onlookers. The scope of this is to be defined and contained by the story line and theme, so that the problem with which they grapple is clearly defined (1970, p.1).

The Teacher

Heathcote defines the teacher as "one who creates learning situations for others" (1970, p.1). The teacher's energies and skills are at the service of his/her pupils during the professional situation. The relationship of the teacher offering experience to the participants, and in turn they offer to the teacher their fresh way of looking at things offers two advantages: 1) it frees the participant to reveal his/her true feelings instead of assuming qualities he/she thinks the teacher expects, and 2) it offers the teacher a freedom which cannot possibly be obtained in the role of the "all knowing." Because both teacher and student recognize the strength of the other in this situation, students are seldom rude or lack class discipline. According to Heathcote, this relationship "produces trust, self-knowledge, caring for others, integrity, and an ability to respond freshly to each situation ("Institute of Education," 1971, p.5).

Techniques

The following techniques form the basis of Heathcote's Informal Drama Method and the Encounter Program.

On-Going Drama. On-going drama is defined as improvisational drama continuing from session to session involving the entire group at one time. The on-going drama is based on a subject decided upon by the group (e.g., California goldrush). The drama often begins with the teacher taking a role and motivating participants to join him/her in related roles. In role, the teacher keeps the drama moving, motivates the participants, and maintains control. Heathcote says that "on-going drama is defined and contained by the story line and theme so that the problem grappled with is clearly defined" (1970, p.1).

Problem Solving. Every on-going drama is based on a central problem or conflict. When drama is reduced to its simplest principle, one will find mainly the representation of a fight, a conflict of some

sort. It is essential that the participants perceive the principle of conflict by learning how to act an objective in relation to an opposing or different objective acted by another. Heathcote maintains that "problem solving is the basis of learning and maturation" (1970, p.1). For example, in an on-going drama about primitive tribes, Heathcote entered the scene "in role" as a visitor from a neighboring tribe and accused the chief of breaking the peace treaty by allowing his braves to shoot poisonous arrows. The problem introduced by Heathcote raised questions involving moral dilemmas which were left for the tribe to solve.

Because on-going drama normally involves the entire class, a wide variety of attitudes and responses are available in finding solutions to problems. As individuals share responses to problems found in the drama, an increasing appreciation of the scope and variety of ways to solve problems becomes apparent to the class.

The Role. Heathcote often continues a drama by staying in the situation through playing a role. She finds that by being "threatening" in her drama role and "unthreatening" in the teacher role she is able to achieve a more open relationship with her class.

> One of the great advantages of role-taking is that it removes the pressure of hierarchy and the need either for the teacher to be unduly respected or deferred to. It removes the need to "put the teacher first" and allows a real exchange of ideas to take place with ease and spontaneity. It also allows the teacher not only to challenge the views and behaviour of the class without the "authority" position being assumed by using the "opinion" one strongly, but also it allows the teacher to "feed" the class with a precision never achieved from an outside position of authority ("The Art of Teaching," 1971, p.1).

Heathcote uses the role to "focus, evaluate, organize, present alternatives, and test disposition, affection, and feelings." ("The Art of Teaching," 1971, p.1).

Questioning. Heathcote uses questioning to challenge, to cause a decision, to up-grade, to support class elaboration, to re-challenge, and to narrow the theme. Heathcote's questions may be stated explicitly or non-verbally, or they may be phrased as statements, but in each case a specific purpose is intended.

Purpose	Example
Commit the group to action	Can you check behind the barrels now?
Requesting information	Can you draw a silencer for us?
To offer alternatives	A play about helping people in trouble or just people in trouble?
To divide the group	Can girls understand these things better than boys?

Questions keep the participants constantly challenged and discovering new insights.

The Brotherhoods Code. Heathcote defines "brotherhoods" as those experiences which are common to all people. Heathcote uses brotherhoods as a classification system and as a technique to extend the area of reference of her class. When confronted with ideas from the class, she mentally reviews how these suggestions may be commom to all people (e.g., brotherhood of all who have suffered pain). This analysis gives her an opportunity to place or categorize the significant aspect of any work and to relate many apparently unrelated sources of material to each other. The brotherhood's code gives her a classification system from which she can formulate questions and focus thinking.

Symbols. In on-going drama it is essential that the teacher "focus factual material and experiences of individuals quickly in order to get drama moving" ("The Art of Teaching," 1971, p.16). Heathcote believes that certain "universal" symbols have the power to unite peoples' thinking without inhibiting their personal and unique contributions.

> A . . . point of significance I should like to make is the importance of the choice of symbols a teacher elects to use in a drama situation. Experiences can rarely be captured in words. When a teacher, therefore, expects group experiences to arise, some aids to everyone being at least on the same track or in the same experience are necessary. In drama the use of the symbol seems to be of primary importance ("The Art of Teaching," 1971, p.16).

The importance of this area for the teacher using drama lies in the fact that in the beginning the symbols create a focus, that is, a way of uniting the student's experiences.

The Press. Heathcote defines a "press" as "encouragement to embrace a newer view and maturing vision and to use new resources" (Hardy, 1972, p.253). An important part of the teacher's job, Heathcote contends, is to introduce presses of various kinds to ensure that the class is constantly extending themselves. That is, when one conflict within the drama is resolved, a newer more maturing vision is sought. If a class is always working in a comfortable area, they never have a chance to grow and develop. Heathcote gives the example of a "stone age drama" to illustrate the technique of the press:

> In the stone age situation I hinted by my own use of words, at a more deliberate unlinguistic style. If a class accepts it I press further and perhaps introduce a more difficult vocabulary or an insistence upon more subtle verbal style. This demands constant and unfailing attention from the teacher and the rewards lie in being glad for the children when they succeed rather than pleased with oneself for having led the class so well ("The Art of Teaching, 1971, p.6).

To introduce presses the teacher must plan in advance and develop skill in deciding the most relevant press. Heathcote emphasizes that the teacher must be careful in the selection of the press to insure that all participants will be capable of successfully completing it.

If the press is accepted and assumed by the group, Heathcote introduces more subtle and difficult tasks. If she observes no response to the press, she realizes that her judgment was either wrong or mistimed. In that case, she waits for another opportunity. The same chance and circumstances never occur twice. Consequently, the press will be introduced differently the next time.

Rituals and Repetition. Rituals and repetitions are used by Heathcote in on-going drama to unify the group and commit them to the drama. Heathcote claims that "most drama goes too fast." Developing a ritual (e.g., hanging up clothes the same way every morning) or a repetition (e.g., saying the same phrase over and over) helps the group gain assurance in their roles in the drama. One of Heathcote's elementary school classes decided that they wanted to make up a drama about wagon trains. Heathcote took the role as "mother" of all the children. At the beginning of each class, Heathcote greeted the children in her mother role and involved them in breakfast-fixing tasks (e.g., stirring batter for pancakes, bringing wood for the fire). Each session the breakfast-making scene was repeated until a ritual was set. Heathcote contended that the ritual of making breakfast helped commit and involve the children in the drama.

Tangibles. Tangibles consist of "real," as opposed to "imaginary," objects which may be used "in the drama" (e.g., blanket for bed) or "out of the drama" (e.g., blackboard). By incorporating actual objects into the drama, the participants' "belief" in the drama is strengthened. Heathcote uses tangibles out of the drama to help focus attitudes and feelings. In a covered wagon scene, for example, Heathcote stopped the drama and asked the children to draw the objects that were inside the wagon. Heathcote resumed the drama as the cut-out objects were carried onto the covered wagon by the children. In another episode of the covered wagon scene, Heathcote stopped the drama and asked each child for the name and birthdate of the character he was playing in the drama.

Task Force. Task force is defined by Heathcote as a project which helps all the participants in the group to crystallize and focus on concepts generated from the on-going drama. Creating a book of personal reflections, designing a mural or developing an informal presentation are all examples of the task force.

Methodology

The Sample

Subjects for this study were drawn from The Aucilla School in Monticello, Florida. The school contains one or more classes for each grade level (i.e., first grade through high school); high, middle, and low socioeconomic classes are represented. Data were collected from fifty-four sixth and seventh grade students who were randomly assigned to two Drama Treatment groups (ENCOUNTER, PLAYS) and two Pure Control groups (MAIN CONTROL and SECONDARY CONTROL). Sexes and grades were represented in similar proportions in all groups.

Independent Variable

Two Drama Treatments and two Control groups were used. Drama Treatment One was ENCOUNTER and Drama Treatment Two, PLAYS. Control groups were referred to as MAIN CONTROL and SECONDARY CONTROL.

Drama Treatment One (ENCOUNTER). ENCOUNTER was composed of thirty, 45 minute sessions which followed regular period scheduling. Subject matter and themes were taken from Bible stories of the Prodigal Son, the Good Samaritan, the Publican and the Pharisee, and the Parable of the Talents. Heathcote's informal drama techniques formed the basis of the program. Participants took part in on-going dramas, improvisational role playing and dramatization. In a typical daily lesson, the procedure might consist of the following developments:

> As students enter the room they are drawn quickly into an on-going drama by the teacher in role. The drama develops slowly as the participants discover insights and decide between several alternatives which direction the drama should go. The teacher comes out of his role for short periods of time to focus attitudes by questioning.

Drama Treatment Two (PLAYS). PLAYS was comprised of thirty, 45 minute sessions paralleling the ENCOUNTER program in subject matter and themes. Students read plays, wrote reports, filled in papers, discussed and analyzed plays, and did play readings. A sample lesson might have included:

> The teacher introduces a play and talks about the main themes and conflicts. Each class member is assigned a part and the play is read aloud. Discussion in which the teacher asks questions about the characters follows.

Control Groups. Two control groups, referred to as MAIN CONTROL and SECONDARY CONTROL, were used in this study to control for effects of testing and pre-test sensitization.

Dependent Variables

Two testing instruments, each defining self-esteem differently, were used in the study.

The Self-Esteem Inventory (SEI). The SEI, developed by Coopersmith, measures qualities of self-esteem pertinent to this study and has shown high reliability and validity (Coopersmith, 1967). The SEI contains 58 items and takes an estimated twenty minutes to complete. It is self-administered, requiring the subject to circle either "like me" or "unlike me" in response to each of the items, which are in the form of descriptive statements about self. The statements are worded especially for older elementary-aged children.

Children's Self-Concept Scale (CSCS). Developed by Piers and Harris, the CSCS consists of 80 simple declarative sentences (e.g., "I am a happy person"). At least half of the sentences are negative in

content (e.g., "I behave badly at home"). In response to these statements the child circles "yes" or "no." The test is administered in approximately thirty minutes and is designed for children in grades three through twelve (Piers, 1969).

The Piers-Harris test represents a more general measure of self-concept which includes self-esteem, while the Coopersmith instrument concerns only the evaluative dimension generally termed self-esteem.

Procedures

One teacher well versed in Heathcote's methodology served as the drama leader for both programs. Three qualified Teaching Assistants were also employed to rotate and work equal time with the two Drama Treatment groups. The Assistants differed from each other and from the Drama Teacher in personality, background and approach. The children responded differently to the Assistants and Teacher. Since responses of the children were expected to reflect both raised and lowered self-esteem, bias should have been reduced.

Prior to the first meeting of ENCOUNTER or PLAYS, the classroom teachers announced that a drama program was going to start in the school. In a purposely short and vague announcement, the teachers indicated that not everyone could participate in the program during the fall but that possibly in the future they could. The teachers read the names of the children who would be participating in the program and said that their names had been drawn out of a hat. The meeting times and locations were announced at that time and randomized.

A test booklet consisting of the Self-Esteem Inventory and the Children's Self-Concept Scale were administered to the two Drama Treatment groups (ENCOUNTER and PLAYS) and MAIN CONTROL group prior to and following the drama programs. The books appeared similar to other standardized tests periodically administered in the school. The SECONDARY CONTROL was given a masked questionnaire taking the same amount of time.

Results

Simple analyses of variance were employed to determine the extent of any pre- and post-test differences on the self-esteem measures. Hypotheses were tested at the .05 level of confidence.

Coopersmith Measure

The analysis of variance revealed that the three groups (ENCOUNTER, PLAYS, and MAIN CONTROL) were significantly different from each other on the Coopersmith Measure yielding a significant F ratio ($F = 3.73$; $df = 2.37$; $p < .05$). Table 1 presents the Source of Variance Table for the Coopersmith Measure.

TABLE 1

ANALYSIS OF VARIANCE
SELF-ESTEEM INVENTORY (COOPERSMITH)

Source of Variance	SS	df	MS	F
Between	267.10	2	133.55	3.73
Within	1326.40	37	35.85	--
Total	593.50	39		

The Principal Hypothesis of this study predicted that subjects participating in Drama Treatment One (ENCOUNTER) would increase in self-esteem more than those in the MAIN CONTROL group. Results of the t-tests were significant ($t = 2.24$; $df = 25$; $p < .05$). The direction of the difference indicated that the ENCOUNTER group showed significantly more positive change in self-esteem than the group receiving no drama at all (MAIN CONTROL). The mean change for the ENCOUNTER group was +5.29, while mean change for the MAIN CONTROL group was -0.46.

Hypotheses two and three predicted the ENCOUNTER would show a greater change toward positive self-esteem than PLAYS and that PLAYS would show a greater change than the MAIN CONTROL. Neither of the selected comparisons was significant at the .05 level. The mean change for PLAYS was +4.79, while the mean change for the MAIN CONTROL was -0.46.

Piers-Harris Measure

The same hypotheses were tested for the CSCS Measure. A simple one-way analysis of variance was computed to compare mean changes among the three groups. The resulting F ratio was not significant; therefore, no selected comparisons could be legitimately computed. The mean changes for CSCS were: ENCOUNTER, +3.21; PLAYS, +2.69; and MAIN CONTROL, +0.08. As can be seen, means were in the predicted direction, but significance at the .05 level was not reached.

Conclusions

Hypothesis One (Principal Hypothesis), which predicted that children receiving the ENCOUNTER program would score higher on self-esteem measures than children receiving no drama instruction, was supported ($p < .05$) by the Coopersmith Measure. While the hypothesis was not supported by the Piers-Harris Instrument, mean changes in the predicted direction were observed on that scale. One explanation for lack of statistical significance may be due to different methods of

operationalizing self-esteem in the two testing instruments (SEI, CSCS). The CSCS measures self-concept; the SEI measure self-esteem. Self-esteem is the evaluative dimension of an individual's self-concept. There are many other dimensions of self-concept. The dimensions of self-concept, other than self-esteem, may not be affected by ENCOUNTER, thereby offering an explanation as to why the results were not statistically significant.

Achieving significance on the Coopersmith instrument provides considerable support for the Principal Hypothesis. Coopersmith has demonstrated that scores on the SEI scale are very stable over time (e.g., high test-retest reliability over several years); therefore, a manipulated change achieving significance is quite substantial. Secondly, achieving significance with the reduced power of the statistical tests (due to small sample size) further substantiates the effect of ENCOUNTER in this study.

Hypothesis 2 predicted that children would score higher on self-esteem measures after having participated in PLAYS (formal drama) than children not so exposed. While Hypothesis 2 failed to achieve significance, mean changes in the predicted direction were observed.

One possible explanation for the lack of statistical significance is the small sample size. Because the treatment groups were small, the statistics used required relatively large differences to obtain significance. A second explanation for failure to support Hypothesis 2 may be due to the "multidimentional" character of the CSCS in measuring more than the evaluative dimension of the individual's self-concept.

Hypothesis 3 predicted that children would score higher on self-esteem measures after having participated in ENCOUNTER (informal drama) than children participating in PLAYS (formal drama). Hypothesis 3 failed to achieve statistical significance on either the SEI or CSCS measure. However, on both instruments ENCOUNTER produced higher mean change scores than PLAYS. Possible factors which may explain why this difference did not manifest itself follow.

1. Sample Size. Because of the small sample size, the statistics used required relatively large differences to obtain significance. With a small sample, the random error due to individual differences is larger, making it more difficult for changes due to the Drama Treatment groups to show up as significant.

2. Absences. Absenteeism was a problem because students who misssed the most sessions had lower change scores. With such a small sample, two or three scores can affect statistical significance.

3. Extraneous Variables. There is the possibility that extraneous variables due to the subject matter or teacher may have helped to produce the change in self-esteem along with the Drama groups. If an extraneous variable was operating, showing a statistically significant difference between the two Drama Treatments would have been difficult.

Discussion

Heathcote's philosophy of informal drama, as exemplified in ENCOUNTER, is a change from "structured," "teacher-centered" approaches to drama. Heathcote's informal drama is loosely structered (e.g., held together by thematic material) and employs improvisational role playing in a person-centered environment. The teacher is a participant rather than "all-knowing." Heathcote begins with what the group is interested in rather than the interests of the teacher. Interaction in the classroom evolves not from knowledge, but from experience. That is, the participants express feelings and emotions and not only factual knowledge. Informal drama taps the resources of the participant and probes his/her knowledge of people (e.g., through drama one takes the role of a father trying to solve a problem with his son) rather than knowledge of things and skills (e.g., putting a puzzle together). In classes that are loosely structured and allow for freedom of expression and ideas, both students and teacher bring "life experiences" (actual experiences in the students' lives) to the roles they play and explore.

From a wider theoretical viewpoint, Heathcote's philosophy is related to a child-centered philosophy of education. Showing changes in self-esteem through the ENCOUNTER program provides support not only for the effect of informal drama, but also substantiates the philosophical and theoretical framework upon which informal drama is based.

Future research should explore the influence of Heathcote's informal drama in altering self-esteem in groups of various ages (e.g., younger children, teenagers, adults). Investigation into the influence of subject matter in altering self-esteem should also be conducted.

The present study has dealt with one dimension of the mind: self-esteem. Coopersmith demonstrated that self-esteem was vital to the effective physical, social, and spiritual functioning of the individual. This study has shown the influence of Heathcote's informal drama in altering self-esteem. It is hoped that future researchers will continue to investigate ways to alter self-esteem in order that the human beings might become the most capable, productive, and talented self that each has the potential to become.

AUTHOR

Pam Woody Barragar is an Associate Professor in the Department of Theatre Arts, California State University, Los Angeles. This study is based upon Barragar's dissertation, completed at Florida State University, Tallahassee, Florida, in 1974.

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A PROGRAMMED APPROACH TO DIALECT TRAINING FOR THE ACTOR

Gordon A. Jacoby

In realistic drama, dialect--the manner of speech characteristic of people indigenous to a particular region or culture--is often an integral part of character. In plays such as Synge's Riders To The Sea and The Playboy of The Western World, or O'Casey's Juno And The Paycock, it is central to the overall effect of the play. In many other plays, the setting and characters suggest the use of dialect to achieve approximate fidelity to the playwright's intentions. Because many actors, particularly in educational and community theatre, cannot reproduce dialects, directing a dialect play often means hours of individual and/or group work teaching the dialect.

This study is an attempt to develop and test a new method of teaching dialects to actors. The primary objective is to construct and test a self-instructional, audiolingual program similar to those used to teach foreign languages. To test the program, the results from its use are compared to those from use of a traditional method of learning a stage dialect—that is, textbooks and recordings. Also necessary to the study is the identification and analysis of dialect variables such as intelligibility and credibility, as well as judgments of the meaningfulness of these variables.

To limit the scope of the study to manageable proportions, only one dialect was taught: Irish-English. The experiment was carried out by 36 volunteer undergraduate Speech-Theatre majors who had no familiarity with dialects. They were randomized into experimental and control groups of 18 each.

Seven units of programming were written and taped verbatim for use by the experimental group. The principles on which the program were based included student-controlled progress, short step-by-step units, frequent reinforcement, and concentration on spoken speech patterns as demonstrated by an experienced dialectician as the program proceeds from phonology through intonation. In the program, the student-actor heard the sound being demonstrated in the context of a work, repeated it (recording his version on the lower track of the tape), repeated the sound once more, and finally put it into a sentence to stress the one sound, but allowing for natural intonation and including sounds already covered. This process was repeated for all the key sound changes and intonation. The student-actor was allowed to stop at any time to repeat difficult passages as he compared his pronunciations with the model's.

Control group materials consisted of copies of chapters on the Irish-English dialect in Marguerite and Lewis Herman's Manual of Foreign Dialects For Stage, Screen and Radio and C. M. Wise's Applied Phonetics, taped recordings of Susan O'Casey reading from Juno And The Paycock, and the British Drama League's Irish-English speakers reading poetry and prose. In addition, a blank tape was provided for practice recordings.

Both groups received a final test passage consisting of a two-minute dialogue from Juno And The Paycock edited to provide each character with the same number of words while containing all key sounds found in the program.

Training was administered in a language laboratory setting. It required the subjects in the experimental group to devote thirty minutes to the program itself and ten minutes practice time applying the material they had learned to the test passage. Each day a new programmed unit was presented. The control group, on the other hand, received the same materials each day. They were to spend thirty minutes on the texts and sample recordings and ten minutes on the test passage. They were given no guidance as to which materials to stress or how to proceed. In all, the subjects attended eight week-day sessions. The duration of the entire experiment, including testing and learning sessions, was fifteen days.

In keeping with the pre-test, post-test, control group design of the experiment, half of the subjects from each group were pre-tested and post-tested, and half post-tested only. The same two-minute passage was used in all testing. Both in the pre-test and post-test, thirty judges, half of whom were active theatre personnel, rated each subject using a one-to-nine scale of his/her reading of the test passage, covering the dimensions of intelligibility, credibility, consistency, intonation, and characterization. Statistical tests (.05 level) between pre- and post-test scores in the dimensions of intelligibility, credibility, and intonation for the experimental group only.

The major conclusion of the study is that the experimental group learned significantly more from the programmed training than did the control group from the "trial and error" method. From this conclusion, it can be inferred that the method or manner of training effects the actor's general competence, no matter what the task or final objective.

Although the results of the study confirmed the hypothesis that the experimental group would learn more, the statistical tests made it clear that theatre terms and concepts need evaluation if complex empirical research is to be reliable. Variables and concepts of acting, discrete when taught, lose this appearance when rated by an audience.

Moreover, it is one thing to prove a system statistically reliable within the experimental framework and another to determine its practical application. The subjects bridged this gap to some extent when they responded to a questionnaire designed to provide criticism of the methods tested. Commenting on the programmed method, the experimental group found its structure, order, and fidelity to the real theatre through the use of dramatic literature particularly advantageous. Conversely, the control group cited confusion in attempting to decide which material was relevant.

A programmed approach does appear to provide a suitable method for the beginning actor. The program, which has been shown to work under experimental conditions, can teach a functioning dialect for performance in a relatively short period of time.

More broadly, the present study indicates that empirical studies in theatre can be valuable by demonstrating the potential of non-traditional modes of learning. In particular, measurement of

theatrical terms and concepts is needed to bring about agreement on meaning. Results should include the expansion of theoretical understanding of theatre, better communication between actor and director, and finally, more meaningful performance.

AUTHOR

This report is based on Jacoby's dissertation, completed at Ohio State University.

APPENDIX ONE

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Richard Wuertz

Reliability of Judgments of Directing Techniques 22
Allen N. Kepke, John C. Stockwell, and Robert Zyromski

Actor-Character Personality Identification in a Theatre Production 29
R. Wayne Smith

Psychology and Drama 38
Brian Sutton-Smith and Gil Lazier

The Effectiveness of Reader's Theatre and Silent Reading in Communicating the Meaning of Unfamiliar Dramatic Literature. . 47
Howard D. Doll

RESEARCH REPORTS

Personality and Controversial Material on the Stage 56
Christopher M. Reynolds

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Gerald R. Miller

Dissonance and Role-Playing in the Theatre 9
Harry W. Mossman

The Relationship of Perceptions of the Body to Pantomimic Ability I: Body-Cathexis 16
Clarence W. Bahs and John Stockwell

The Relationship of Perceptions of the Body to Pantomimic Ability, II: Body Image Boundaries 30
John C. Stockwell and Clarence W. Bahs

"Believability" in Acting: Concept Into Construct 44
George Gunkle

Micro-Momentary Facial Expressions and the Actor: An Investigation 52
Carol L. Sloman

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Transactional Analysis: A New Perspective For the Theatre 1
Roger W. Hite, Jackie Czerepinski, and Dean Anderson

The Psychological Effect of Counterattitudinal Acting 18
Harry W. Mossman

Body Buffer Zone and Proxemics in Blocking 27
John C. Stockwell and Clarence W. Bahs

Dramatic Behavior Norms of Florida Children 41
Gil Lazier, Douglas Zahn, and E. Joseph Karioth

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Information Processing in the Theatre:
Subject Sex and Stimulus Complexity 1
William Gourd

Manipulation and Measurement of Vocal
Frequency of Student Actors 21
Patricia Clift Howard and Anthony Holbrook

What You See Is What You Get: Black As Victim 35
Louie Crew

Three Components of the Actor's Nonverbal Repertoire:
Power, Immediacy, and Responsiveness 44
Harry S. Dennis and Mark L. Knapp

Implementing Audience Analysis Findings 53
Dennis R. Klinzing and Lawrence J. Wilker

Director Expectancy and Actor Effectiveness 60
Keith A. Miller and Clarence W. Bahs

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Analyzing Rehearsal Interaction 1
Robert E. Porter

A Diagnostic System for the Actor 32
Brian K. Hansen

Emotion, Emotion Language, and Acting 41
George Gunkle

Factor Analysis in Theatre Research:
A Warning 50
Harold J. Nichols

RESEARCH REPORT

A Programmed Approach to Dialect Training for
the Actor 55
Gordon A. Jacoby

BOOK REVIEW

Understanding Playscripts:
Theory and Method 58
Brian K. Hansen

APPENDIX TWO

BEHAVIORAL RESEARCH IN THEATRE

An Annotated Bibliography

Prepared by

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August, 1979

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This collection of references is intended to be an introduction for the interested student of theatre with or without a background in scientific research. Accordingly, empirical research materials are included which (a) focus on theatre generally; (b) touch on major research developments in the area (and permit, through individual article bibliographies, acquaintance with antecedent research); and (c) are relatively easy to read. The selections include quantitative studies and essays which attempt to bring an empirical or behavioral research perspective to traditional theoretical problems in theatre.

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Richardson, D. R. and C. R. Waal. "Increasing the Reliability of Judgments of Acting Performances." Quarterly Journal of Speech. 52 (1966), 378-382.

A measurement study that provides useful information for those who must rank or rate acting performances.

Smith, R. Wayne. "Actor-Character Personality Identification in a Theatre Production." Empirical Research in Theatre, 1 (1971), 29-37. (63p.) (ED 122 326)

Measures the extent to which actors "identified" with their characters during a typical rehearsal and performance period.

Stern, Robert M. and Nancy L. Lewis. "Ability of Actors to Control Their GSRs and Express Emotions." Psychophysiology, 4 (1968), 294-299.

A unique investigation that supports the belief that "method"

actors can raise or lower their emotional intensity with greater facility than "non-method" actors. This ability seems to be related to amounts of previous practice but not to judged success on the stage.

Sutton-Smith, Brian and Gil Lazier. "Psychology and Drama." Empirical Research in Theatre, 1 (1971), 38-46. (63p.) (ED 122 326)

Presents a unique scale for judging the extent to which an actor is "in character," "dramatically involved," while performing.

Taft, Ronald. "A Psychological Assessment of Professional Actors and Related Professions." Genetic Psychology Monographs, 44 (1961), 309-383.

Though confined to one traveling company of actors, this study is a model of applying sociological techniques to acquire extensive information about actors in a typical social system.

Wuertz, Richard. "When Actors Memorize Lines: An Examination of Three Models." Empirical Research in Theatre, 1 (1971), 15-21. (63p.) (ED 122 326)

A training study that suggests a "best method" of learning lines may be related to the type of language in a play, the kind of memorized result desired, and the predilections of individual actors.

Directing

Greenberg, Bradley S. "The Dimensions of Casting a Play." The Cue, 42 (1967), 9-12.

A factor analysis study that found two underlying dimensions in casting judgments: "ability" and "suitability." In addition, a small number of casting criteria were found to predict "with some sensitivity" who got cast in the available roles.

Kepke, Allen, John Stockwell, and Robert Zyromski. "Reliability of Judgments of Directing Techniques." Empirical Research in Theatre, 1 (1971), 22-28. (63p.) (ED 122 326)

Tested three hypotheses about judging directing from observations of performed scenes. Results pertain to problems of specifying criteria, ranking vs. rating, and the stability from night to night of intuitive standards of judges.

Miller, Keith A. and Clarence W. Bahs. "Director Expectancy and Actor Effectiveness." Empirical Research in Theatre, 4 (1974), 60-74. (76p.) (ED 122 329)

A quantitative study supporting the idea that actors who are expected by their directors to turn in the better performances are perceived as better by the audience.

Porter, Robert E. "Analyzing Rehearsal Interaction." Empirical Research in Theatre, 5 (1975), 1-31. (62p.) (ED 122 330)

Presents a simple quantitative technique for describing some important features of communication among actors and their director in rehearsals.

Tannenbaum, Percy, Bradley S. Greenberg, and Margaret Leitner. "Changes in Semantic Compatibility During the Production of a Play." Speech Monographs, 30 (1963), 340-344.

Studies the extent to which actors and their director hold similar perceptions of the characters and the play at different times during the rehearsal and performance periods of two theatre productions. A pattern of generally increasing "compatibility" is revealed for both productions.

Vohs, John L. and Ronald A. Willis. "A Social Influence Approach to the Director-Actor Relationship." The Speech Teacher, 16 (1967), 143-149.

An essay that applies Kelman's processes of social influence to the director-actor relationship in rehearsal. Pros and cons are discussed.

The Theatre Audience

Addington, David. "Varieties of Audience Research: Some Prospects for the Future." Educational Theatre Journal, 26 (1974), 482-487. (EJ 110 727)

A thorough survey of techniques for investigating audience responses to a theatre production.

Cronkhite, Gary, Diane Mishler, and John Kirk. "The Dimensions of Perception of a Dramatic Production." Speech Monographs, 38 (1971), 132-141.

Attempts to unearth the bases by which an audience judges a performed play. Preference emerges for Likert-type belief statements rather than semantic differential techniques as a tool for this type of study.

Gourd, William. "Cognitive Complexity and Theatrical Information Processing: Audience Responses to Plays and Characters." Communication Monographs, 44 (1977), 136-151. (EJ 167 542)*

Explores through measurement the differences in response to dramatic dialogues by "cognitively complex" and "cognitively simple" persons.

Kadushin, Charles. "Shakespeare and Sociology." Columbia University Forum, 10 (1966), 25-31.

An excellent example of using sociological methods, including the in-depth interview, to better understand the nature of a theatre audience.

Klinzing, Dennis R. and Lawrence J. Wilker. "Implementing Audience Analysis Findings." Empirical Research in Theatre, 4 (1974), 53-58. (76p.) (ED 122 329)

Presents a method for gathering demographic information from a theatre audience and shows how a University Theatre put this information to work.

Creative Drama and Theatre for Children

Davis, Jed H. "Prospectus for Research in Children's Theatre." Educational Theatre Journal, 13 (1961), 274-277.

A long series of stimulating questions, susceptible to empirical research, that reveals the complexity of theatre for children. Most of these questions have not yet been pursued through behavioral research.

Kase, Judith B., Sue M. Sikes, and Charles D. Spielberger. "Emotional Reactions to Frightening and Neutral Scenes in Story Theatre." Communication Monographs, 45 (1978), 181-186. (EJ 190 214)*

Supports the notion that frightening scenes can create high levels of "state anxiety" in children, and presents other findings by gender and by proneness to anxiety.

Lazier, Gil, Douglas Zahn, and E. Joseph Karioth. "Dramatic Behavior Norms of Florida Children." Empirical Research in Theatre, 3 (1973), 41-70. (73p.) (ED 122 328)

A study of children engaged in improvisational dramatic activities. The findings show differences by age group, gender, and section of the country, and support a relationship between "dramatic" behavior and "creative" behavior.

Schmidt, Toni, Elissa Goforth, and Kathy Drew. "Creative Dramatics and Creativity: An Experimental Study." Educational Theatre Journal, 27 (1975), 111-114p.

A field study which provides quantitative support for the con-ion that exposure to creative drama increases the creativity children.

Shaw, Ann. "A Taxonomical Study of the Nature and Behavioral Objectives of Creative Dramatics." Educational Theatre Journal, 22 (1970), 361-373.

Introduces the author's "taxonomy of educational objectives in creative dramatics," presents an extended example, and implies an enriched way of understanding cognitive and affective behavior in creative drama activities.

Miscellaneous

Leitner, Margaret, S. Moss, and Percy Tannenbaum. "Who Makes the Play Run?" Journalism Quarterly, 40 (1963), 375-377.

Reveals a relationship between the reviews of seven New York newspaper drama critics and the length of runs of Broadway plays for the 1953-1954 season. Other specifics emerge, such as how well each critic "correlates" with the season's production runs and what combination of critics affords the best predictive power.

Rabby, L. B. and L. S. Harms. "The Effect of Quantity of Stage Lighting on Audience Comprehension." Empirical Research in Theatre, 1 (1971), 1-14. (63p.) (ED 122 326)

Five related experiments investigating the extent to which quantity of stage lighting affect audience comprehension of dramatic dialogue.

Thayer, David. "Lighting and the Audience." Southern Speech Journal, 27 (1962), 110-118.

A measurement study of the effects upon the audience of "conventional" and "unconventional" lighting of short dramatic scenes.

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